

ABSTRACT OF THE DISCLOSURE

A bioartificial liver system has a separator for separating plasma and blood, a liver-slice culture apparatus, or bioreactor, to detoxify the plasma. The bioreactor has a chamber with plasma and gas inlets, at least two meshes mounted parallel one above the another, near the upper portion of the chamber forming at least two horizontal layers separated by a space. A
5 plurality of liver slices positioned within the space, a supply of plasma is provided to the chamber so that it rises to contact the liver slices, and is alternatively removed from contacting the liver slices, and a supply of gas is provided to the top of the chamber. The system also includes a reservoir for containing plasma entering and exiting the chamber. Methods are provided for detoxifying plasma using the bioartificial liver system.